American Megatrends, Inc. et al. (hereinafter "SMBIOS Specification"). The contents of this document are incorporated herein by reference. With regard to the SMBIOS Specification, the SMBIOS database includes data structures separated into 128 Types that include data concerning everything from the system BIOS used by the computing device, the processor, memory, chassis, ports, slots, etc, of the computing system. Within each structure Type there is various data related to the subject of the Type designated by data Fields.

For example, a Type 0 structure includes data related to the BIOS of the computing system. Stored in this structure is information concerning the vendor of the BIOS, the version of BIOS, BIOS starting address, BIOS characteristics, etc. Each piece of information is stored within the structure in different Fields. Further, each Field may be stored as different data types. Specifically, the vendor's name and BIOS version are stored as strings in the database, while BIOS characteristics, which indicates all the various characteristics of the BIOS, is stored as a bit field. For each structure Type and each of its Fields, the template file of the present invention includes data descriptor keys and information for interpreting and displaying the information. The structure of the template file and OEM template file is described below.

There are two main parts of the template file **20**: the Main header and the data body. Note that the OEM template does not include a Main header; it only includes the data body portion. The Main header is organized as shown in Table 1:

Table 1 – Main Template File Header

Offset	Size	Type	Description
00	dd	Signature	SMBIOS Data Signature (4 bytes)
04	dd	Version	DWORD version
08	db	Control Flag	Control Flag (1 byte) Bit 0: 0-editable fields displayed Bit 1: editable fields enabled
09	db	Checksum	8 bit checksum byte

It includes information concerning the version, editable fields within the template file, and a checksum.

Following the header, is the body of the template file. The OEM template file includes only the body and not the Main header. The body of the template file includes

structure definitions for Types 000-127 and the OEM template file may include structure definitions for Types 128-255. The body includes all of the information for interpreting and displaying each Field of each data structure stored in the SMBIOS database. Specifically, for each Field of each data structure type in SMBIOS, there is a corresponding Field definition in the template file for interpreting and displaying that Field . Each structure definition in the template file is preceded by its own structure header that contains information about the structure's type, its title, which offsets are editable in the structure, and a pointer to the start of the descriptor keys. The structure definition header is organized as shown in Table 2:

Table 2 – Template Structure Header

Offset	Size	Type	Description
00	dw	Structure Header ID	Special processing key that identifies the start of a new structure definition
02	db	Type	Type of SMBIOS structure
03	dw	Pointer to Title	Offset to the structure's title string
05	dw	Pointer to Editable Offset List	Offset to a null terminated list of editable offsets in the structure
07	dw	Pointer to the Start of Data	Offset to the Start of the Structure Definition Data

Following the structure header is the information for interpreting and displaying the data structures of the SMBIOS database. This information is typically in the form of descriptor keys for describing the data structure and control keys, which are used to navigate the structure definition. The data descriptor keys and control keys are listed below in Tables 3 and 4:

Table 3 - Descriptor Keys

Key	Description
DATA_ID	used to describe all types of raw data
STRING_ID	used to describe strings
BIT_FIELD_ID	used to describe bit values and their settings
ENUM_ID	used to describe enumerated values and their settings
GROUPED_BIT_FIELD_ID	used to describe groups of bits that exist within a larger data type
FREEFORM_STRINGS_ID	used to describe free-form string data

Table 4 - Control Keys	
Key	**Description**
STRUCTURE_HEADER_ID	used to mark the start of a new SMBIOS structure definition
ENDOF_STRUCTURES	used to mark the end of the template file
SET_REPEAT_COUNT_ID	used to indicate that the utility program needs to calculate the number of times a group of fields are to be repeated
SET_REPEAT_SIZE	used to indicate that the utility program needs to calculate the total size of the group of fields that are repeated
SET_REPEAT_START_ID	used to mark the starting location for a group of repeated fields
SET_REPEAT_END_ID	used to mark the ending location for a group of repeated fields

Each of the descriptor keys and control keys is described below. The description below is used to illustrate how these keys may be used to construct individual structure definitions for each offset of each Type data structure stored in the SMBIOS database. The keys are described in conjunction with specific data structures from the SMBIOS database to provide examples of their use. These examples can be used to construct structure definitions for the remaining data of the SMBIOS database. For example, below is illustrated use of the DATA_ID descriptor key to create a structure definition for a data value stored in the SMBIOS database indicating the speed of an internal clock. This example can be used to create structure definitions in the template file and OEM template file for all other data values stored in the SMBIOS database.

I. Data Descriptor Keys

Each data descriptor key is described below. For each key, the following information is provided: a description of the key, the encoded value designating the key, any sub-keys, and an example of use of the key.

A. DATA_ID

The DATA_ID descriptor key is used for fields that consist of some raw data value. Examples of raw data stored in the SMBIOS database include memory speed, processor clock, handle numbers, etc. As many raw data values are given in terms of a